

SECTION III

**HEALTH CARE
UTILISATION**

Chapter 5. Primary care

Introduction

Despite the importance of primary care and its central role in the health care system the data available documenting utilisation of this sector of the health system is poor. The data presented here is collated from a variety of sources and focuses on finance and hospital utilisation rates for different primary care organisations, mainly IPAs. This reflects the data available rather than its importance. No data is presented on use of other primary care services such as nursing services. Further information on well child services can be found in the section on Child Health.

National data

General Practitioner consultations

The findings of the New Zealand Health Survey (1996/7) show that general practitioners (GPs) are the most consulted primary care professional. Approximately 80% of adults and children interviewed had seen a GP at least once in the previous 12 months. The average number of GP visits a year was four for adults and six for children and older (65 years and over) people. Eleven percent of men and 14% of women had *not* visited their GP at least once in the previous 12 months when they felt they needed to. They were most likely to be young, from deprived areas, on low family incomes, or Maori or Pacific peoples.

A 1990 study of a sample of 106 New Zealand GPs¹ identified skin, respiratory disorders and musculo-skeletal problems as the most common reasons for consultation. The most common individual problem was high blood pressure, followed by back complaints, upper respiratory tract infections, asthma, coughs, abdominal pain, diarrhoea and vomiting, and headaches.

In 1993 a study was undertaken to determine the types and range of medical services delivered to people served by the Mangere Health Centre². The study was conducted during two separate periods of a month each. 6708 patients were seen (57% female) and these patients had 9706 consultations with GPs. Just over 91% of patients were represented by the five largest ethnic groups - European 39%, Maori 27.4%, Samoan 17%, Tongan 4.1% and Cook Islander 3.8%. 65% of patients were community card-holders. Analysis by ethnicity of those who held community cards showed that 53% of Europeans were card-holders, 77% of Maori, 72% of Samoan, 72% of Tongan and 79% of Cook Islanders. Upper respiratory tract infection, otitis media, asthma, bronchiolitis and hypertension were the most common diagnoses. Three hundred and twenty one patients were referred to outpatients and twenty-one patients were admitted to hospital (just under 1% of all referrals).

¹ Tilyard MW, Dovey SM, Spears GF. Biases in estimates from the RNZCGP computer research group. *NZ Med J.* 1995; 108: 118-21.

² Bracken T, Lamont M, Whickman L. *The Mangere Health Centre 1993 Study.* July 1995.

Variations in GP visits

By age

Age is an important determinant in the types of disorder presented in general practice as well as the number of visits people make to a GP a year. Encounter studies and population surveys both suggest that young children and older adults are more likely to use general practice services. Common problems in GP-child consultations identified by one study³ were otitis media, upper respiratory tract infections, asthma, and tonsillitis. Other problems were eczema, viral infections, conjunctivitis and tonsillitis. In the adult age-groups the most common reasons for consultation were musculo-skeletal, respiratory, cardio-vascular, skin and reproductive problems. Younger adults (25-44) were more likely to attend for respiratory problems and middle aged adults (45-64) for musculo-skeletal problems. Among older people (65 years and over) over 30% of the consultations were for cardiovascular problems, mainly high blood pressure and ischaemic heart disease.

By ethnicity

Studies have varied in their estimates of GP use by ethnicity - some suggesting Maori and Pacific peoples use GP services more and others that they use them less. On balance it has been suggested that Maori and Pacific peoples do not use GP services as often as their overall patterns of mortality and hospital use suggest is necessary⁴. The 1996/7 New Zealand Health Survey found that 19% of Maori and 18% of Pacific peoples indicated unmet needs for GP services in the past year compared with 11% of European/Others.

In terms of reducing barriers to primary care the main policy tools used are age (subsidy for under 6 year olds to visit the GP, and prescriptions) and the Community Service Card (CSC) and High Use Health Card (HUHC). The CSC card is income related, for example a couple earning less than \$28,000 per year, or beneficiaries eligible for a means tested benefit. Accurate figures for Counties Manukau are not known, but estimates from the Auckland University Department of General Practice suggest that uptake of CSC cards in Auckland is 77% of all people eligible⁵. One difficulty is that the CSC card scheme is administered by Work and Income New Zealand, meaning that to obtain a card people have to go outside the health system (which is the only place the CSC card is used). People thus tend to only get a card after they start needing to see a doctor rather than before. Uptake of the HUHC card is less problematic as it is administered through the health system. Eligibility is 12 visits to the general practitioner in the preceding 12 months.

Consultations with other primary care professionals

Patients see a practice nurse as part of a consultation with a GP or independently. The New Zealand Health Survey found that just under a quarter of respondents had seen a nurse in the previous 12 months. Eighteen percent had seen a nurse without seeing a doctor at the same time. People seeing the nurse were more likely to be women or children. Nearly a third of adults or children with disabilities had seen a nurse in the previous 12 months. Other than general practitioners, pharmacists are the health professional people are most likely to see. This can be for picking up a prescription,

³ McAvoy B, Davis P, Raymont A et al.. The Waikato Medical Care (WaiMedCa) Survey 1991-2. *NZ Med J* 1994; 107 (pt 2): 388-433.

⁴ Davis P, Lay Ree R, Sinclair O et al. Maori/Non-Maori patterns of contact, expressed morbidity and resource use in general practice: data from the Waikato Medical Care Survey 1991-2. *NZ Med J* 1997; 110: 390-2.

⁵ Gribben B. The community services card and utilisation of general practitioner services. *NZ Med J* 1996; 109: 103-5.

seeking health advice and/or purchasing medicines not on the schedule. In the previous 12 months 44% of New Zealanders had visited a pharmacist for advice or medication. Seventy percent had collected a prescription, and 70% of people with disabilities had visited a pharmacist. Primary care in Counties Manukau is likely to be similar.

Primary care in Counties Manukau

Utilisation of care

From the Northern Region Health Survey, 68% of the Counties Manukau sample suffered an illness or injury in the 12 months prior to the survey. Of these, 28% did not consult a health professional, largely due to the ailment being considered minor (65%). The next most important reason for non-attendance was cost, cited by 14%.

Eighty percent of Counties Manukau people attended a GP in the 12 months prior to the survey, similar to Central Auckland 81%, and higher than West and North Auckland residents' 76%. The main reason given for difficulties experienced in going to see a GP in the last 12 months cited by Counties Manukau residents was transport (41%).

Provision of care

Table 62. GP numbers and organisations in Counties Manukau

Name of organisation	Approx Number of GPs	FTE GPs	Type of contract
ProCare (south) Limited	53	50	Fee for service
South Med Limited	53	50	Fee for service
East Health Limited	57	45	Fee for service
First Health Limited	36	25	Capitated
Mangere Health Resources	17	17	Fee for service
Pukekohe	14	10	Capitated
Union Health Centres	8	6	Capitated
Raukura Hauora O Tainui	3	2.6	Fee for service
South Seas Health	5	1	Fee for service
Non-aligned GPs	44	40	Fee for service
Total	290	247	

Notes - GP numbers from Integrated Care Team, SAH as at September 2000. Otahuhu-based GPs included.

General practitioners in Counties Manukau work as part of an organisation, usually an Independent Practitioner Association (IPA), or are non-aligned. Most GPs (85%) in Counties Manukau do belong to an organisation, with more than half belonging to the three largest, Procure South, South Med and East Health (Table 62). The location of GP surgeries in Counties Manukau is shown overleaf (Map 10).

Funding

There are around 247 FTE primary care doctors practicing in Counties Manukau, around 1,600 people per GP. This compares with Central Auckland 1,200 people per GP, North Auckland 1,500 and West Auckland 1,800. This is based on prescribing volumes⁶, probably the best measure for actively practicing GPs. Other methods tend to overstate, for example according to the Medical Council Workforce Survey there were 270 FTE GPs in Counties Manukau (not including Otahuhu)⁷. By either measure Counties Manukau has a lower number of GPs per head than the New Zealand average, without adjusting for the relative need of the population

⁶ Jackson G. General practitioners in North Health, 1995/6. Unpublished document, Nov 96

⁷ Medical Council. The New Zealand Medical Workforce Survey, 1997. *MCNewZ* April 1998.

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Recent work released by the HFA (with a number of queries around the data and assumptions used) suggests that Counties Manukau is relatively under-funded for primary care (Tables 63-65).⁸ Based on this work Counties Manukau residents had an actual expenditure per head of \$237 compared with an expected expenditure of \$253 in 1997 (Table 63).

Table 63. Actual HFA-funded primary care expenditure compared with expected, 1997.

	GMS \$\$ '000	Pharm \$\$ '000	Lab \$\$ '000	Actual \$\$ per head	Expected* \$\$ per head	Difference
North Auckland	10,993	36,695	8,453	254	259	5
West Auckland	7,101	19,807	3,964	178	258	80
Central Auckland	22,160	65,887	14,939	298	248	-50
Counties Manukau	20,283	49,773	10,897	237	253	16
Total Auckland	53,892	172,163	38,253	261	257	-4

Source: HFA. *Expected based on needs-adjusted capitation formula. Otahuhu included in Central Auckland. Adjusted for patient flows into Central Auckland, but may still understate West Auckland flow (ie West Auckland expected may be too high and Central Auckland expected too low).

The HFA work included an estimate of a 3.2% “flow” of Counties Manukau residents to consult central Auckland general practitioners (Table 64).

Table 64. Expenditure and consultation rates for general practitioners across the four Auckland sub-regions.

	North	West	Central	South	Total
<i>Census population</i>	220,836	173,379	345,768	341,730	1,081,499
Capitated population	-	10,381	13,091	24,573	48,045
Consultation rate/year	4.7	3.6	5.9	4.8	5.0
Net cross boundary registrations (%)	-2.4	-1.6	8.9	-4.9	-
Net cross boundary consults (%)	0.5	-0.7	3.4	-3.2	-
Percentage FTE GPs in PCOs	75.5	59.2	58.6	76.4	66.9
Population per FTE GP	1464	1357	1142	1467	1328
Annual per capita expenditure - \$	255.5	181.9	290.2	249.5	261.3

Source: Malcolm L. Inequities in primary care expenditure in the Auckland region. In Press. 2000. PCO = Primary Care Organisation. Otahuhu included in Central Auckland.

Table 65. Per capita expenditure on GMS, pharmaceutical & laboratory services, observed compared to expected.

PCO	Popula- tion (as est by LM)	Actual per capita expenditure (\$)				Expec- ted per capita (\$)	Differ- ence (%)
		GMS	Pharm	Lab	Total		
CHS	93,207	48.3	162.6	38.0	248.8	282.3	-11.8
ProCare North	77,263	53.8	192.2	39.4	285.4	260.9	9.4
IPCS	93,133	54.2	158.1	32.2	244.5	271.6	-10.0
Procure West	20,690	43.7	156.3	26.7	226.7	224.9	-13.1
ProCare Central	176,517	62.3	212.4	49.3	324.0	255.9	26.6
East health	57,038	43.2	178.4	46.4	268.0	230.6	16.2
Mangere HRT	34,647	84.7	137.6	33.9	256.2	308.7	-17.0
Pukekohe	18,676	62.0	129.2	22.4	214.6	235.1	-8.7
ProCare South	70,842	74.2	180.1	35.3	289.7	283.3	-2.3
SouthMed	91,560	82.6	161.7	36.1	280.5	270.4	3.8

Malcolm L. op cit

⁸ Malcolm L. *Primary care utilisation and expenditure in the Auckland subregions*. HFA North, Sept 1998.

The distribution of “unders and overs” varies by primary care organisation (Table 65). Organisations serving more affluent areas tend to have higher actual compared with expected expenditure than do organisations serving relatively deprived populations.

Hospitalisation rates

It is possible to calculate hospitalisation rates for Counties Manukau residents based on the named GP given on admission by the patient (Table 66). This information has been linked with hospital discharge data to provide insights into referrals from GPs by area. Much of the differences seen can be attributed to the different age, ethnicity and socio-economic status of the area in which a particular group of general practitioners are practising. East Health for example was responsible for most discharges from Howick and Pakuranga. This population is more likely to be European and elderly with a higher socio-economic status. Some of the differences are also due to the size of the population attributed to the GPs.

Table 66. Crude catchment populations and discharge rates calculated per FTE GP 1999.

Name of organisation	Crude catchment population (estimated)*	Estimated discharges per 1000 population	FTE GP's	Crude discharge rate per FTE GP
ProCare (South) Limited	71,000	169	50	240
South Med Limited	61,600	169	50	208
East Health Limited	57,800	92	45	106
First Health Limited	34,000	160	25	217
Mangere Health Resources	20,400	172	17	206
Pukekohe	15,800	120	10.2	189
Union Health Centres	8,300	169	6	233
Raukura Hauora O Tainui	1,900	163	2.6	115
South Seas Health	-	-	1	-
GP not based in CM	39,300	144	-	-
CM GP (not identified further)	36,600	-	-	-
Non-aligned GPs	39,500	145	40	132
Total	386,491	148	247	181

*Estimated catchments are from discharges from SAH - using the GP named by the patient, and attributing as a proportion of the total estimated CM 1999 population. Numbers are very approximate - practices with relatively young populations or who refer people to hospitals other than SAH will be underestimated. South Seas Health doctors were cited on too few records to enable an estimate to be made.

No specific figures are available for practice sizes, or the number of people who might regularly visit a particular doctor or consider them to be "their" doctor. On admission to hospital patients are asked for their general practitioner. The importance of this is stressed to the patient as all communications about the patient go back to the doctor they have named. Over 90% of records at Middlemore Hospital have a named GP. Taking just the Counties Manukau residents admissions and extrapolating from the percentage naming each GP, one can derive rough catchment figures (Table 66). These figures are indicative only, should be used with caution.

Table 67 shows that in Counties Manukau, the available data suggest that approximately 3% of consultations result in an admission. This table has been compiled using hospitalisation rates and makes a number of assumptions. It assumes that all patients who were hospitalised had been referred by their GP and that the rates of GP consultation are 4.2 (national average).

**Table 67. Estimated percentage of consultations leading to admission
Counties Manukau 1999**

Name of organisation	Crude catchment population (est)	Estimated number of consults	No of hospital discharges	Est. % of consults leading to admission
ProCare (South) Limited	71,000	298,300	12,000	4%
South Med Limited	61,600	258,600	10,400	4%
East Health Limited	57,800	242,600	4,770	2%
First Health Limited	34,000	142,800	5,425	4%
Mangere Health Resources	20,400	85,800	3,502	4%
Pukekohe	15,800	66,500	1,928	3%
Union Health Centres	8,300	34,800	1,398	4%
Raukura Hauora O Tainui	1,900	7,700	299	4%
South Seas Health	-	-	-	-
Other	115,400	484,700	-	-
Total	386,491	1,623,000	44,707	3%

See text for assumptions

Of the approximately 16 million GP encounters occurring in a year in New Zealand, only a small proportion result in patients being referred for hospital treatment. In the WaiMedCa Study, 9% of GP-patient encounters resulted in any type of referral, with one third of these being to another health professional (mainly physiotherapists) one third to a private specialist and one third to a public specialist (McAvoy et al 1994). Less than 1% of encounters resulted in a direct referral for patient admission to hospital. Counties Manukau rates appear higher than this.

In the WaiMedCa study the most common individual disorders leading to hospital referral were angina, asthma, pre and postnatal care, meningitis, appendicitis and dehydration. Altogether these disorders accounted for one quarter of GP initiated requests for hospital admission.

Potentially avoidable hospitalisations

General practitioners working in areas where people are poorer are more likely to have a higher percentage of potentially avoidable hospitalisations (Table 68).

Table 68. Discharges of Counties Manukau residents from SAH by primary care organisation, 1999

GP/IPA cited	PAH				Non PAH				% acute as PAH
	AC	EL	AA	Total	AC	EL	AA	Total	
East Health	1,277	211	91	1,579	2,017	844	1,413	4,274	39
First Health	1,234	216	78	1,528	1,857	704	2,181	4,742	40
Mangere HRT	870	139	43	1,052	1,300	446	1,313	3,059	40
ProCare	2,858	637	156	3,651	4,352	2,151	3,754	10,257	40
Pukekohe	356	103	21	480	674	337	698	1,709	35
South-Med	2,497	440	118	3,055	3,477	1,621	3,225	8,323	42
South-Seas	45	2	3	50	45	25	36	106	50
Union	357	40	18	415	476	166	446	1,088	43
GP not in CM	1,684	537	84	2,305	4,534	2,475	1,818	8,827	27
non-aligned	1,290	233	85	1,608	1,910	823	1,700	4,433	40
No GP cited	1,154	122	82	1,358	3,411	481	2,360	6,252	25
Total	13,622	2,680	779	17,081	24,053	10,073	18,944	53,070	36

Source: Middlemore Hospital. PAH = potentially avoidable hospitalisations, AC = Acute, EL = elective, AA = Arranged. Non-aligned GPs are not part of an IPA or other PCO. Based on GP nominated by patient on admission.

Summary

As can be seen from the above data we have to rely to a large extent on national data for information on consultations in primary care. This has obvious limitations, as we know the population of Counties Manukau varies both in age and ethnicity from New Zealand as a whole. On balance national data suggest that Maori and Pacific peoples do not use GP services as often as their overall patterns of mortality and hospital use suggest is necessary. Although nationally less than one percent of GP consultations are thought to lead to an admission in Counties Manukau we estimate that this figure reaches 3%. Financial data suggest that primary care in Counties Manukau has been under-funded, particularly with respect to the relative deprivation in the area.

Chapter 6. Emergency department

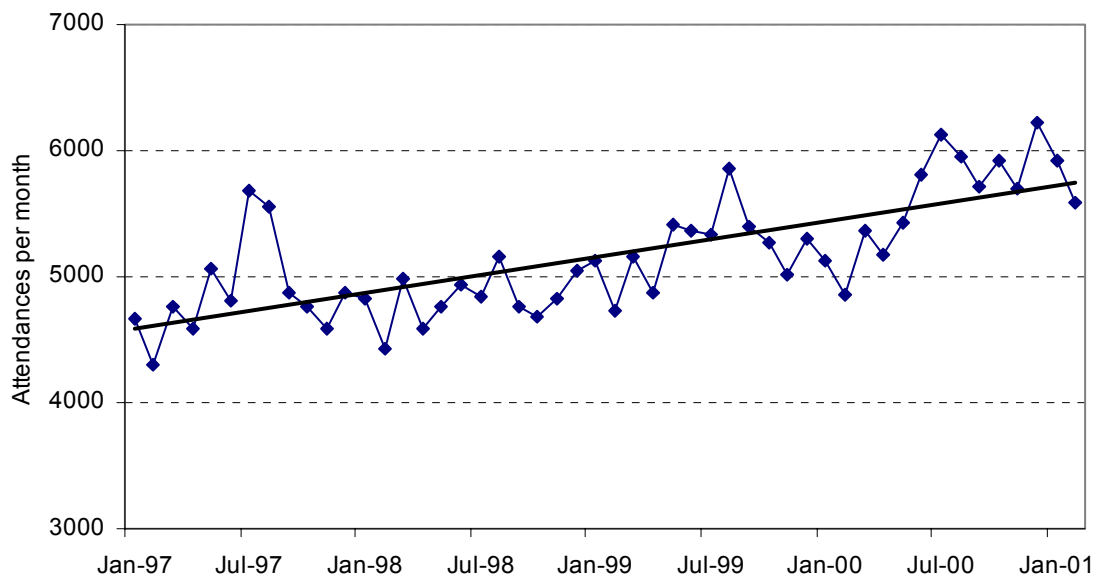
Introduction

The admitting and emergency departments at Middlemore Hospital are staffed 24 hours a day, seven days a week and provide a full (level 6) emergency service. As the closest hospital to Auckland International Airport, Middlemore has a specific contingency role in the event of an airline emergency.

Attendances

Over recent years the number of attendances to the emergency department at Middlemore hospital have increased (Figure 68). Much of the increase has been in triage categories 3 and 4⁹. The opening of the new building in late 2000 has accelerated the trend.

Figure 67. Attendances to Middlemore Hospital Emergency Department, 1999



Source: Middlemore Hospital

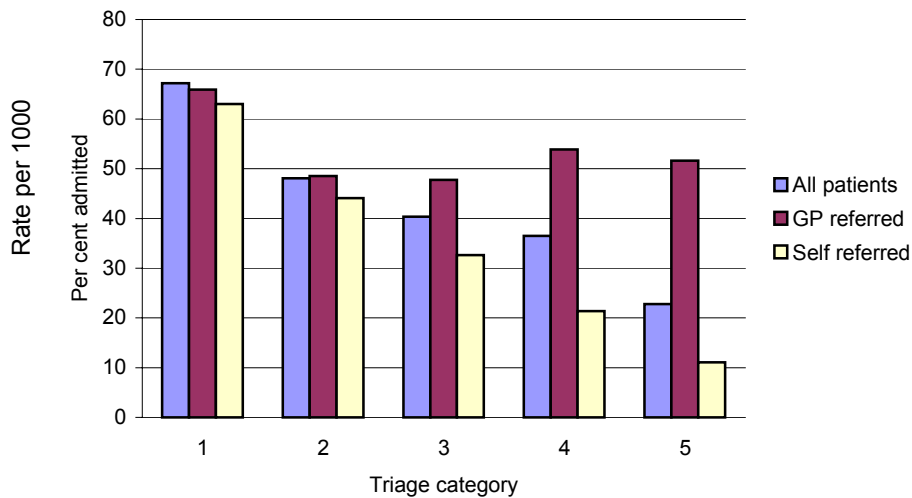
For the 1999-2000 year the emergency department handled 63,000 separate episodes of care or encounters, representing approximately 19,000 individuals. These encounters accounted for 38,000 (60%) of admissions to hospital, either to assessment areas (30%) or to wards (60%). Of the 40% who were not admitted about a quarter (24%) were referred by a general practitioner.

Approximately 16,000 people were classified as "walk-ins", triage 3, 4 or 5 and sent home after receiving medical attention. Walk-ins are defined as people who arrived on foot (i.e. not in an ambulance), and include both self-referrals and referred patients. Maori, Pacific and Others represented 20%, 30% and 50% respectively of walk-ins. Figure 68 shows the place of residence for residents of Counties Manukau. Relatively deprived areas, and areas close to Middlemore feature strongly.

⁹ Triage levels range from 1 - 5 with 1 and 2 assessed as requiring more immediate attention. Triage levels 3 and 4 are less urgent, and triage 5 is non-urgent.

Only 1600 individuals classified as walk-ins, triage level 3,4 or 5 and sent home, attended the emergency department more than once between July 1999 and June 2000.

Figure 68. Emergency Department attendances - place of residence, per 1000 population, 1999

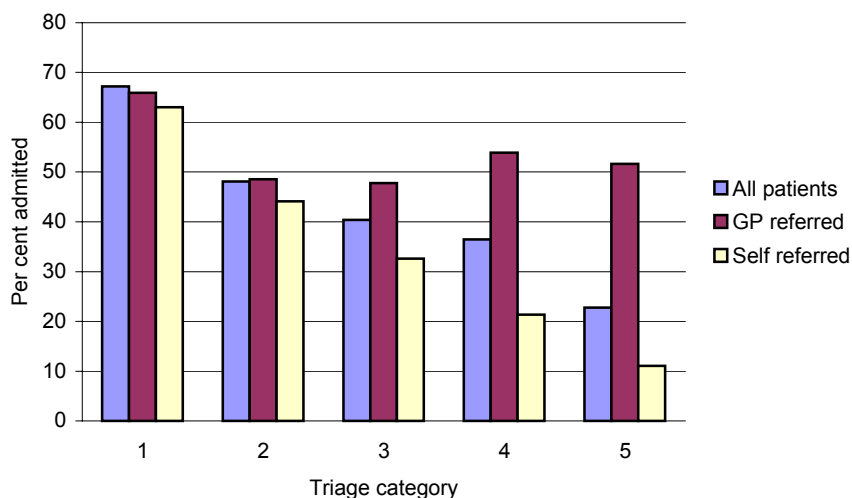


Source: Middlemore Hospital

The following sections provide further information regarding frequent users of emergency department services and those with frequent admissions to hospital. By strengthening the linkages between these individuals and primary care it is hypothesised that certain attendances to the emergency department and admissions to hospital can be prevented.

In all but triage category 1 patients referred to the Emergency Department by their general practitioner were more likely to be admitted compared to all attendances. This is particularly noticeable in triage categories 3, 4 and 5. By this measure GP referrals were much more likely to be appropriate than self-referrals and reinforces the notion that patients should attend their general practitioner as the first contact with the health service where possible.

Figure 69. Percentage of attenders to Middlemore ED admitted by triage category and referral source, 1999



Source: Middlemore Hospital

Frequent users of ED services

Frequent users are defined here as individuals with three or more attendances to the emergency department at Middlemore hospital in a year (July 1999 - June 2000). During this period there were 8547 attendances by individuals 18+ years. This represented 2051 individuals attending three or more times to the emergency department. Only 15% of attendances were related to external injury events. For 97% of emergency department attendances individuals were able to supply the name of their general practitioner.

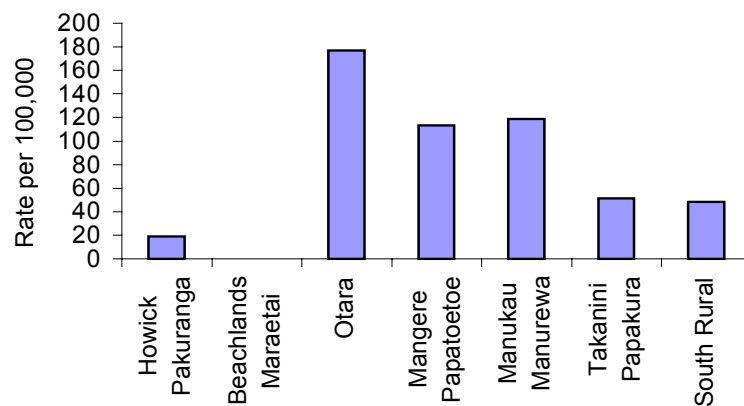
The most frequently recorded diagnoses (by DRG) recorded for these attendances were; “unknown”, ischaemic chest pain, asthma, abdominal pain, localised infection, COD, lower respiratory tract infection, and congestive heart failure. On the surface, primary care providers could manage many of these conditions, thus avoiding unnecessary attendance to the hospital emergency department.

Unplanned frequent admissions via the emergency department

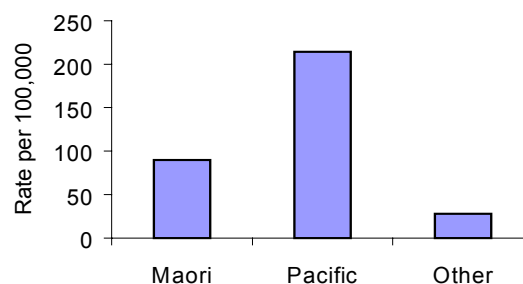
People with frequent admissions to hospital are defined here as individuals with three or more unplanned admissions via the emergency department at Middlemore hospital in one year (1999 - 2000). All rates expressed in this section are crude rates per 100,000. Identifying these individuals may assist service managers in determining the reasons for frequent presentations and admissions through the department. By supporting primary care services, some of these admissions may be avoided. Children admitted to hospital three or more times between 1999 - 2000 (rate per 100,000 0-14 year old) are shown in Figure 70.

Figure 70. Children (0-14) admitted via Middlemore ED three or more times (1999 - 2000).

a. by place of domicile



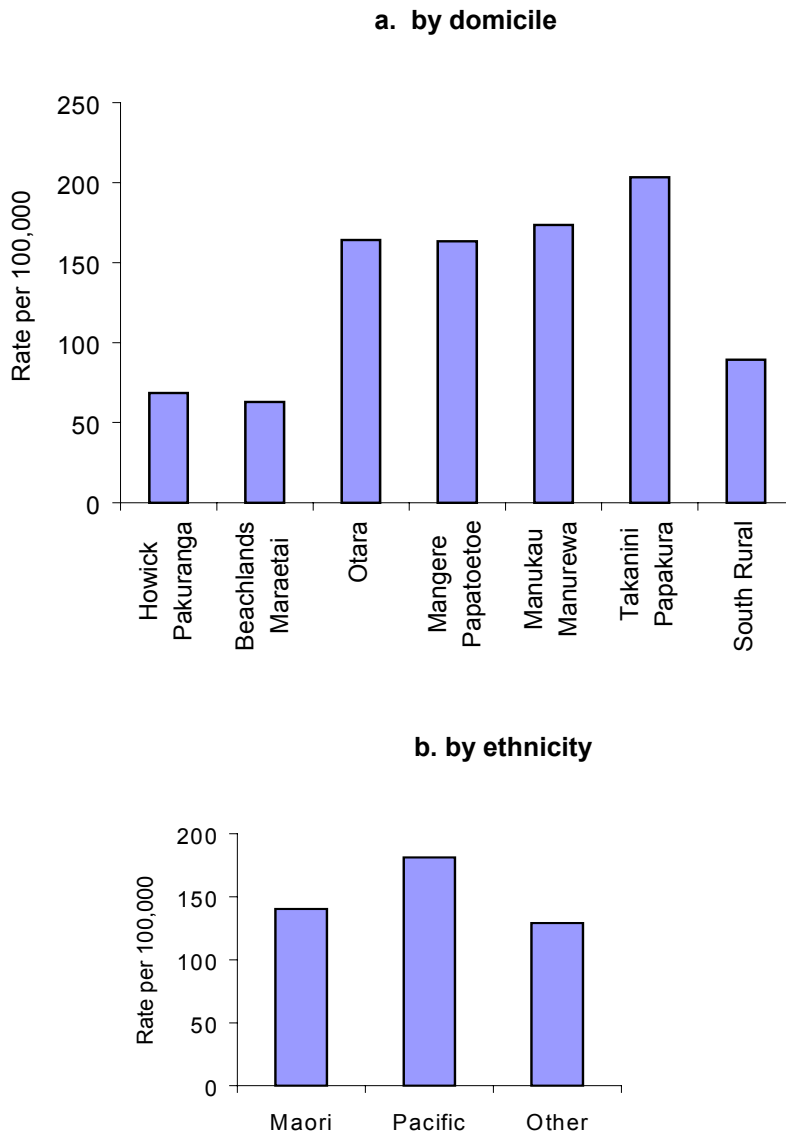
b. by ethnicity.



Source: Middlemore Hospital

Adults (age 15+) admitted to hospital three or more times between 1999 - 2000 (rate per 100,000) are shown in Figure 71 by location of domicile and ethnicity. The relatively deprived suburbs show high rates. The highest rate for Takanini/Papakura may well reflect accessibility issues for after-hours primary care – the normal pattern is for residents living closer to the ED being the highest users. Unlike for children Maori and Pacific people do not have especially high ED re-attendance rates as compared with European and other ethnic groups.

Figure 71. Adults (age 15+) admitted via Middlemore ED three or more times 1999 - 2000.



Source: Middlemore Hospital

Summary

The Emergency Department at Middlemore Hospital handles more than 63,000 attendances a year. The attendance rate has been gradually increasing over the last few years, mainly triage levels 3 and 4. Sixty percent of those admitted to hospital are seen initially in the emergency department. More than ninety percent of people attending the emergency department are able to supply the name of their GP. Just over 2000 people attended the emergency department three or more times in a year.